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## **CLAIMS**

1. A mixture of phthalocyanine dyes of Formula (1) and salts thereof:

$$MPc \underbrace{ \left( SO_3H \right)_x}_{ \left( SO_2NR^1R^2 \right)_y}$$

$$\underbrace{ \left( SO_2NR^3LNR^4R^5 \right)_z}_{ \left( SO_2NR^3LNR^4R^5 \right)_z}$$

Formula (1)

wherein:

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M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

L is optionally substituted C<sub>1-20</sub> alkylene, alkyenylene or alkynylene, optionally interrupted by –O-, -NH- or -S-;

 $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  independently are H or optionally substituted  $C_{1\!-\!4}$ alkyl;

R<sup>5</sup> is H or an optionally substituted hydrocarbyl; or

R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached represent an optionally substituted aliphatic or aromatic ring system;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4;and

the substituents, represented by x, y and z, are attached only to a  $\beta$ -position on the phthalocyanine ring.

- 2. A mixture of phthalocyanine dyes according to claim 1 wherein M is Cu.
- 3. A mixture of phthalocyanine dyes according to either claim 1 or claim 2 wherein x

has a value of 0.5 to 3.5, y has a value of 0.5 to 3.5 and z has a value of 0.5 to 3.5.

- 4. A mixture of phthalocyanine dyes according to any one of the preceding claims free from fibre reactive groups.
- 5. A mixture of phthalocyanine dyes according to any one of the preceding claims of Formula (2) and salts thereof:

$$MPc \underbrace{ (SO_{3}H)_{x}}_{(SO_{2}NR^{1}R^{2})_{y}}$$

$$\underbrace{ (SO_{2}NR^{3}L^{1}NR^{6}R^{7})_{z}}_{(SO_{2}NR^{3}L^{1}NR^{6}R^{7})_{z}}$$

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## Formula (2)

wherein:

M Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

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 $L^1$  is optionally substituted  $C_{1-8}$  alkylene optionally interrupted by -O-, -NH- or -S-;

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>6</sup> independently are H or optionally substituted C₁₄alkyl;

R<sup>7</sup> is H, optionally substituted aryl, optionally substituted alkyl or optionally heterocyclyl; or

R<sup>6</sup> and R<sup>7</sup> together with the nitrogen atom to which they are attached represent an optionally substituted 5 or 6 membered aliphatic or aromatic ring;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4;and

the substituents, represented by x, y and z, are attached only to a  $\beta$ -position on the phthalocyanine ring.

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6. A mixture of phthalocyanine dyes according to any one of claims 1 to 4 of Formula . (3) and salts thereof:

$$CuPc \underbrace{\hspace{1cm} (SO_3H)_x}_{\hspace{1cm} (SO_2NR^1R^2)_y}$$

$$(SO_2NR^3L^2NR^8R^9)_z$$

Formula (3)

wherein:

Pc represents a phthalocyanine nucleus of formula;

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{N} N \xrightarrow{N} N \xrightarrow{\alpha} \beta$$

$$\beta \xrightarrow{\alpha} N \xrightarrow{N} N \xrightarrow{\alpha} N \xrightarrow{\alpha} \beta$$

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L<sup>2</sup> is optionally substituted C<sub>1-4</sub> alkylene;

 ${\sf R}^1$  ,  ${\sf R}^2$  ,  ${\sf R}^3$  and  ${\sf R}^8$  independently are H or methyl;

R<sup>9</sup> is H or phenyl bearing at least one sulfo, carboxy or phosphato substituent and having further optional substituents; or

R<sup>8</sup> and R<sup>9</sup> together with the nitrogen atom to which they are attached represent an

optionally substituted 5- or 6- membered aliphatic or aromatic ring;

x is 0.1 to 3.8:

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4;and

the substituents, represented by x, y and z, are attached only to a  $\beta$ -position on the phthalocyanine ring.

- 7. A composition comprising a mixture of phthalocyanine dyes according to any one of claims 1 to 7 and a liquid medium.
  - 8. A composition according to claim 7 wherein the liquid media comprises a mixture of water and organic solvent or organic solvent free from water.
- 30 9. A composition according to either claim 7 or claim 8 wherein at least 70% by

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weight of the total amount of phthalocyanine dye is of Formula (1).

10. A composition according to claim 9 wherein at least 95% by weight of the total amount of phthalocyanine dye is of Formula (1).

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- 11. A composition according to any one of claims 7 to 10 which is an ink suitable for use in an ink jet printer.
- 12. A process for forming an image on a substrate comprising applying an ink accordingto claim 11 thereto by means of an ink-jet printer.
  - 13. A material printed with a composition according to any one of claims 7 to 11 or a mixture of phthalocyanine dyes as described in any one of claims 1 to 6 or by a process according to claim 12.

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14. An ink-jet printer cartridge comprising a chamber and an ink wherein the ink is in the chamber and the ink is as defined in claim 11.